

PROFILE ANGLES OF ETHYLENE DIAMINE PICRATE AND ITS HOMOLOGS

A. C. SHEAD, University of Oklahoma, Norman

In connection with research on metal amine complexes, it was found that ethylene diamine picrate¹ is insoluble in water and yields perfect large yellow hexagons. Since the series of the diamines is important in certain phases of toxicology and criminology, it was thought worth while to record the following results.

Ethylene diamine picrate. Three or four drops of a solution of ethylene diamine containing three drops of the base per ml of water was added to four ml of water. This dilute solution was treated with one drop of acetic acid, and then dropwise with a saturated aqueous solution of picric acid; four drops of picric acid solution was usually sufficient. Large, perfect, hexagonal crystals gradually formed. Care was taken not to add too much picric acid reagent too rapidly. Before the crystals became too coarse by long digestion, they were suspended in the mother liquor and poured out on a microscope slide. After they had settled, they were carefully blotted by means of a ring of filter paper (Grimes, Bond and Shead 1940).

The largest obtuse angle of the hexagon measures 149.5°. Length of crystals, 0.06 mm to 0.90 mm.²

Propylene diamine picrate. Two drops of propylene diamine were added to thirty ml of water, and to three ml of this basic solution was added six drops of saturated picric acid solution and one drop of acetic acid. Large lustrous crystals with 90.0° angles were precipitated. This is a sensitive test for propylene diamine.

1,4-Diaminobutane picrate. 1,4-Diaminobutane was treated like propylene diamine except that the solutions used were somewhat more dilute. The picrate proved colloidal in the presence of the acetic acid; if this acid was omitted, the picrate tended to precipitate in needles.

Further work is in progress and will be reported more fully later.

LITERATURE CITED

- Grimes, M. D., J. M. Bond and A. C. Shead. 1940. Proc. Okla. Acad. Sci. 20: 111.

¹Preliminary work by Philip S. Bailey, Master's Thesis, University of Oklahoma.

²Work done during the summer of 1941 at the University of Oklahoma by Miss Junia E. McAllister, Dallas, Texas.